

Research on the Application of Availability Bias on Decision Making

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Abstract: The availability bias is a common cognitive bias that influences decision-making in individuals. The basis for the bias is the availability heuristic, which involves judging the likelihood of an event based on the ease with which examples come to mind. The article examines the definition of the availability heuristic, its impact on decision-making, and its application to purchasing decisions. The availability bias can have a significant effect on decision-making, and it is evident in marketplace activities. Therefore, this study examines the impact of usability bias on decision making through two research studies that demonstrating the influence of availability bias on decision-making. According to the results of the analysis, the availability bias can lead to a certain cognitive bias, which can affect the decision to buy or invest in a product.

Keywords: availability bias, investment decision, purchasing decision, decision making

1. Introduction

Panic selling is a phenomenon in econometrics. Panic selling occurs when a significant drop in stock prices triggers fear and anxiety among investors, causing them to quickly sell their stocks at a loss. This is often a knee-jerk reaction to negative news or market conditions. This can lead to a domino effect, as other investors see the sudden drop in prices and panic, exacerbating the downturn.

The Efficient Market Hypothesis suggests that all investors strive to maximize their investment returns, and all consumers try to maximize the utility they get from products. Only under these circumstances can the market operate normally. However, Investors in the financial market are often not rational and objective. People will be disturbed by various interferences that hinder them from making the most rational decisions, leading to invalid market predictions and expectations. One of the common interferences in individuals is the availability bias, and panic selling also stems from this bias. The availability bias is prevalent in daily life and is widely applicable in tourism, academia, investments, purchases, and various decision-making processes. By understanding how availability bias affects investment and purchasing decisions, better choices and improved overall market performance can be made. Therefore, the aim of this study is to explore the impact of availability bias on purchasing decisions.

Using theoretical analysis methods, this study examines the influence of availability bias on purchasing decisions, and whether this influence is moderated by other factors. Meanwhile, this research aims to deepen the understanding of the influence of availability bias on purchasing decisions, provide consumers with decision support that can help them develop more informed

purchasing strategies, and improve the effectiveness and efficiency of organizational purchasing decisions.

The findings of this study will provide valuable guidance for consumers in making purchasing decisions and offer new theoretical and practical foundations for optimizing individual purchasing strategies.

This study holds significant theoretical implications. By uncovering the mechanisms through which availability bias affects purchasing decisions, this research will expand the field of study related to purchase decision-making behavior and provide a new framework for understanding such behavior. Additionally, this study also has practical implications that will help consumers become aware of the existence of availability bias in information retrieval and memory processes, guiding them to carefully consider various factors in the purchasing decision-making process.

2. Availability Bias Overview

2.1. Definition

Tversky and Kahneman popularized the term ‘availability heuristic’ in 1974 to describe a mental shortcut used by consumers to simplify the decision-making process [1]. The availability heuristic is defined as the tendency to rely on information that is easily retrievable from memory, rather than seeking out all relevant information and evaluating it objectively [2]. This heuristic is activated by the ease with which information can be recalled, and factors that make information more available include salience, vividness, negativity, and primacy-recency [1]. Under this heuristic, individuals can quickly assess the overall situation or predict future trends based on easily recalled information.

However, using this strategy may lead to erroneous judgments. Depending on available information to estimate the probabilities of the events leads to wrong estimation [3]. For example, people believe that taking a plane is more dangerous than taking other transportation (such as driving), for the former has been widely reported and has caused more drama than the latter. These types of errors are collectively known as availability bias, which inevitably affects people’s estimation [3-4]. Other memorable events include personal experiences of family or friends, client advice, and recent, frequent, vivid, significant, emotional, or concrete examples, all of which could create the availability heuristic [3-5]. This indicates that the availability heuristic may lead people to make ineffective decisions. Where the market is composed of a variety of investment and purchasing decisions, the availability heuristic could cause a significant influence.

2.2. Mechanism

The availability bias originates from a better way to process information. The human brain possesses limited capacities in terms of processing speed and memory storage. Faced with an array of unlimited choices, the brain must allocate its finite cognitive resources to prioritize significant decisions. As a result, heuristics are employed to facilitate rapid decision-making.

Dual process theory posits that the human mind operates through two distinct processes, System 1 and System 2. System 1 is characterized by speed and intuition, which relies on unconscious outputs and acquired knowledge from experience. System 2 is characterized by slower, deliberate thinking, which engages in conscious, analytical reasoning [2]. Importantly, decision-making involves the interaction of both systems rather than reliance on a single system [6]. The availability heuristic is a cognitive bias that is associated with System 1 thinking. When relying on the availability heuristic, individuals have limited cognitive processing capacity, and the mind offsets this limitation by focusing on information that is readily available in memory [7]. This means that people are more likely to rely on information that is easily retrievable from memory, rather than seeking out all relevant information and evaluating it objectively [7].

Overall, availability bias is the deviation in how individuals acquire and process information, leading them to exhibit a preference for attending to and remembering easily accessible information while overlooking information that is less readily available or challenging to obtain. Moreover, the availability heuristic is an example of how System 1 thinking can lead to cognitive biases in decision-making, and the emergence of availability heuristic is attributed to the limited capacities of the brain.

3. Availability Bias Effect on Purchasing Decision

3.1. Modes of Influence

3.1.1. Purchasing Process

Purchasing is a common behaviour, for people make multiple purchasing decisions every day. Most decision-making theories assume that the consumer's purchase process involves several steps [8]. For example, the Engel-Kollat-Blackwell model is on five basic decision-process stages: problem recognition, search for alternatives, alternate evaluation, purchase, and outcomes [9]. However, it is not necessary for every consumer to go through all these stages, depending on whether it is an extended or routine problem-solving behaviour [9]. Overall, purchasing behaviour can be viewed as three stages: information searching, evaluation and purchasing.

3.1.2. On Each Decision Stage

First, availability bias can influence consumers' perceptions and judgments of available information. Fang et al. documented the phenomenon in which individuals frequently rely on the first piece of information they acquire about a particular subject, known as the focusing effect or illusion [10]. This cognitive heuristic can lead to a biased focus on one aspect of an event while neglecting others. Hammond et al. discuss this tendency, highlighting that individuals may place excessive importance on the initial information they receive, resulting in a narrowed perspective that fails to consider alternative or subsequent information [11]. This indicates that consumers are easily influenced by the first information they receive, which is a Manifestation of availability bias.

Second, availability bias can affect decision-makers' risk preferences. Pachur and Hertwig observed that the influence of affective information, in comparison to availability, had a stronger effect on judgments related to the value of a statistical life and perceived risk, as opposed to judgments concerning risk frequency [12]. This indicates that availability bias causes decision makers to place greater value and concern on available information, and the risks and uncertainties associated with that information.

Lastly, most of the researchers mentioned attitude as a key factor that influenced purchasing decisions. The theory of Planned Behaviour (TPB) proposes that people's intentions to engage in a particular behaviour are influenced by their attitudes towards it [13]. Attitude is a person's overall evaluation of a product or service, and it is influenced by personal experience, social influence, and marketing communications [14]. Attitudes can indirectly influence behaviour through the intercession of intention, which is influenced by a person's attitude towards the behaviour [14]. According to O'Connor et al., attitude was a significant predictor of intention to purchase Fair Trade products [13]. In addition, availability cues, such as online reviews, can have a significant impact on consumer attitudes towards products. Nazlan et al. found that consumers utilize all available information, including descriptive reviews, to minimize uncertainties when evaluating restaurants and making food-related decisions [7]. This indicates that attitude plays a significant role in determining buying patterns, and availability bias can have a significant influence.

To summarize, the impact of availability bias on procurement decisions is reflected in decision makers' cognitive judgments, risk preferences, and attitudes toward available information.

Understanding and recognizing the impact of availability bias is essential for decision makers to be able to better avoid and correct the occurrence of such bias in procurement decision making, and to improve the accuracy and effectiveness of decision making.

3.2. Cases

3.2.1. General Purchasing Decision

Based on the principle of availability bias, brands that provide customers with readily available information often have a competitive advantage in the market. As a result, allowing them to maintain market dominance over an extended period. Lee et al. focused on availability heuristics effect on the South Korean mobile industry and suggested proposing a model analysis through availability bias, customer churn could be predicted from advertisement distribution [15]. The purpose of their research was to identify the market influence of the frequency of word exposure. Their finding showed that the first mover (advertisement publishing) tends to gain a greater inflow of subscribers, on the back of its comparative advantage [15]. The more the company's strengths appear in the media, the more inflow it gets. The availability heuristic can have a significant impact on consumer purchasing decisions by influencing their perceptions of product usefulness, prevalence, and alternatives. The research reveals that the availability heuristic may serve as a valuable tool for companies seeking to augment sales. However, as the utility of this heuristic for the market may be somewhat limited. This is because publicizing expenses are ultimately borne by consumers, and there exists a fundamental disparity between the quality and quantity of promotional methods and the actual quality of the product.

3.2.2. Investment Purchasing Decision

Pool et al. investigate the investment preferences of US investors and suggested that investors tend to select stocks that are located in close proximity to their homes [16]. The study findings revealed a significant relationship between excess portfolio weight and the geographical distance between the headquarters of a company and the mutual fund manager's home state. The availability heuristic has a notable impact on the stock market. Investors incorporated their familiarity with their hometown into the companies located in their hometown, causing many investors to be more willing to invest in companies closer to their hometown, even if these companies may not necessarily help them earn more money. The observed bias resulting from this heuristic may have significant implications for pricing bubbles, whereby investors may demonstrate a heightened level of comfort and confidence towards familiar assets, potentially leading to a willingness to pay a premium for such assets [16]. This phenomenon can result in an over or under-valuation of these assets. Furthermore, the research suggests that even professional investors may be susceptible to the influence of familiarity bias in their investment decision-making processes [16]. This indicates that even a more prudent decision, such as an investment decision, is susceptible to the availability heuristic. It seems that the availability heuristic is unavoidable in human decision making. Does this mean that in the dual process theory, system 1 and system 2 instead of being independent, but each has a certain influence on the decision, more time there is, the more proportion of system 2 will be.

4. Conclusions

The availability heuristic is a way of processing information that can be helpful, but its advantages are also what lead to its biases. These biases are reflected in both purchasing and investment decisions. In purchasing decisions, research has found that advertising has a positive correlation with sales, and first movers tend to have a greater market share. In investment decisions, even professional investors

tend to prefer companies in their hometown, leading investors to be more willing to invest in companies closer to them. However, this paper only discusses two common scenarios affected by the availability heuristic and does not analyze or elaborate on the impact in other industries or in other contexts. In the future, the impact of availability heuristics on decision making could be analyzed in conjunction with behavioral psychology or other social issues to give more ways to avoid or reduce the impact.

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